



ISIS3510.ST25.txt

SEQUENCE LISTING

RECEIVED
JAN 15 2002
TECH CENTER 1600/2900

<110> Teng, Ching Teou
Cook, Phillip Dan
Tillman, Lloyd
Hardee, Gregory E.
Ecker, David J.
Manoharan, Muthiah

<120> Compositions And Methods For Non-Parental Delivery Of Oligonucleotides

<130> ISIS3510

<140> 09/315,298

<141> 1999-05-20

<150> 08/082,624

<151> 1998-05-21

<160> 58

<170> PatentIn version 3.1

<210> 1

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<220>

<221> misc_feature

<222> (1)..(20)

<223> Phosphorothioate linkage

<400> 1

gccaagctg gcatccgtca

20

<210> 2

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<220>

<221> misc_feature

<222> (1)..(20)

<223> Phosphorothioate linkage

<400> 2

ccccaccac ttccctctc

20

<210> 3

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<400> 3

agccatagcg aggctgaggt t

21

<210> 4

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<400> 4

aacatctccg taccatgcca

20

<210> 5

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<400> 5

cccaggcatt ttaagttgct g

21

<210> 6

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<400> 6

gtttaaggca gcacctaag a

21

<210> 7

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<400> 7

tcacccaaag gtttaggctt g

21

<210> 8

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<400> 8

gcaatcatga cttcaagagt t

21

<210> 9
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<400> 9
 gtgccggggt cttcgggc

18

<210> 10
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<400> 10
 catggtttcg gagggcgtc

19

<210> 11
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<400> 11
 tcgcgctccc tctctcggc

20

<210> 12
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<400> 12
 cacccaagag agcagaaagt

20

<210> 13
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<400> 13
 cccttcctac cgctgctgac

20

<210> 14
 <211> 20
 <212> DNA
 <213> Artificial Sequence

```

<220>
<223> Antisense Sequence

<400> 14
cctccgaccc atccacgtag                                20

<210> 15
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Sequence

<400> 15
gttgacgtcc tacggaaaca                                20

<210> 16
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Sequence

<220>
<221> misc_feature
<222> (1)..(20)
<223> Phosphorothioate linkage

<400> 16
tccgtcatcg ctctcaggg                                20

<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Sequence

<400> 17
tgctgttcgt gccccgcgcg                                20

<210> 18
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Sequence

<400> 18
ctaaggcaca aggcgggctg                                20

<210> 19
<211> 20
<212> DNA

```

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<220>

<221> misc_feature

<222> (1)..(20)

<223> Phosphorothioate linkage

<400> 19

tccgcgctgt gacatgcatt

20

<210> 20

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<400> 20

cctctctggt taaaacttta tccat

25

<210> 21

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<400> 21

ttcatatcct gagtcatgtc g

21

<210> 22

<211> 18

<212> RNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<400> 22

gcuaauaccu uaacccag

18

<210> 23

<211> 17

<212> RNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<400> 23

cauauuugcc cugaaag

17

<210> 24

<211> 21

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Sequence

 <400> 24
 taaaaagaat atgatcttca t 21

 <210> 25
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Sequence

 <400> 25
 agcaactgag ccacctga 18

 <210> 26
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Sequence

 <400> 26
 gccatagggg gcagggaagg c 21

 <210> 27
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Sequence

 <400> 27
 ctctcgacc catctctctc cttct 25

 <210> 28
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Sequence

 <400> 28
 ctctcgacc catctctctc cttcta 26

 <210> 29
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Antisense Sequence

<400> 29	
gctctcgac ccattctctt ccttct	26
<210> 30	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Sequence	
<400> 30	
gtggtgggtg ggtgggt	17
<210> 31	
<211> 26	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Sequence	
<400> 31	
gcctattctg ctatgtcgac acccaa	26
<210> 32	
<211> 26	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Sequence	
<400> 32	
cttcgggcct gtcgggtccc ctcggg	26
<210> 33	
<211> 26	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Sequence	
<400> 33	
gctggtgatc ctttccatcc ctgtgg	26
<210> 34	
<211> 26	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Sequence	
<400> 34	
ctactactcc ttgactttgg ggattg	26

<210> 35
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<400> 35
 cttcgggcct gtcgggtccc ctcggg

26

<210> 36
 <211> 26
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<400> 36
 cuucgggccu gucggguccc cucggg

26

<210> 37
 <211> 8
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<400> 37
 ttgggggtt

8

<210> 38
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<400> 38
 gtgctcatgg tgcacggtct

20

<210> 39
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<400> 39
 cattcaaag gtttgctgc

20

<210> 40
 <211> 20
 <212> DNA
 <213> Artificial Sequence


```

<220>
<223> Antisense Sequence

<400> 40
gcaggcaaac catttgaatg 20

<210> 41
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Sequence

<400> 41
tttgggtcca tcatcttcag caaag 25

<210> 42
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Sequence

<400> 42
catcatcttc agcaaagata 20

<210> 43
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Sequence

<400> 43
acgcgaaaaa atgcgtacaa 20

<210> 44
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Sequence

<400> 44
taaaccaaaa aaatggggca 20

<210> 45
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Sequence

<400> 45
tggggcttac cttgcgaaca 20

```

<210> 46
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<400> 46
 gacgtggggc ttaccttgcg 20

<210> 47
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<400> 47
 tcttcaacga cgtggggcctt 20

<210> 48
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<220>
 <221> misc_feature
 <222> (1)..(21)
 <223> Phosphorothioate linkage

<400> 48
 gcgtttgctc ttcttcttgc g 21

<210> 49
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<220>
 <221> misc_feature
 <222> (1)..(20)
 <223> Phosphorothioate linkage

<400> 49
 gttctcgctg gtgagtttca 20

<210> 50
 <211> 15
 <212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<220>

<221> misc_feature

<222> (9)..(9)

<223> 5'-methyl

<220>

<221> misc_feature

<222> (13)..(13)

<223> 5'-methyl

<220>

<221> misc_feature

<222> (15)..(15)

<223> 5'-methyl

<220>

<221> misc_feature

<222> (9)..(15)

<223> 2'-O-methoxyethyl

<220>

<221> misc_feature

<222> (1)..(15)

<223> Phosphorothioate linkage

<400> 50

aacttgctgc tgctc

15

<210> 51

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense Sequence

<220>

<221> misc_feature

<222> (4)..(4)

<223> 5'-methyl

<220>

<221> misc_feature

<222> (6)..(6)

<223> 5'-methyl

<220>

<221> misc_feature

<222> (13)..(13)

<223> 5'-methyl

<220>
 <221> misc_feature
 <222> (15)..(15)
 <223> 5'-methyl

<220>
 <221> misc_feature
 <222> (19)..(19)
 <223> 5'-methyl

<220>
 <221> misc_feature
 <222> (1)..(20)
 <223> Phosphorothioate linkage

<400> 51
 . gtgctcatgg tgcacggtct

20

<210> 52
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<220>
 <221> misc_feature
 <222> (1)..(4)
 <223> 2'-O-methoxyethyl

<220>
 <221> misc_feature
 <222> (17)..(20)
 <223> 2'-O-methoxyethyl

<220>
 <221> misc_feature
 <222> (6)..(7)
 <223> 5'-methyl

<220>
 •<221> misc_feature
 <222> (11)..(11)
 <223> 5'-methyl

<220>
 <221> misc_feature
 <222> (13)..(15)
 <223> 5'-methyl

<220>
 <221> misc_feature
 <222> (19)..(19)
 <223> 5'-methyl

<220>
 <221> misc_feature
 <222> (1)..(20)
 <223> Phosphorothioate linkage

<400> 52
 gtgtgccaga caccctatct

20

<210> 53
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<220>
 <221> misc_feature
 <222> (1)..(5)
 <223> 2'-O-methoxyethyl

<220>
 <221> misc_feature
 <222> (2)..(2)
 <223> 5'-methyl

<220>
 <221> misc_feature
 <222> (16)..(20)
 <223> 2'-O-methoxyethyl

<220>
 <221> misc_feature
 <222> (18)..(20)
 <223> 5'-methyl

<220>
 <221> misc_feature
 <222> (1)..(20)
 <223> Phosphorothioate linkage

<400> 53
 gctgattaga gagaggtccc

20

<210> 54
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Antisense Sequence

<220>
 <221> misc_feature
 <222> (1)..(20)
 <223> Phosphorothioate linkage

<400> 54
ttgcttccat cttcctcgtc

20

<210> 55
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Sequence

<220>
<221> misc_feature
<222> (2)..(4)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (8)..(8)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (12)..(12)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (15)..(16)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (19)..(19)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (13)..(20)
<223> 2'-O-methoxyethyl

<220>
<221> misc_feature
<222> (1)..(20)
<223> Phosphorothioate linkage

<400> 55
gcccaagctg gcatccgtca

20

<210> 56
<211> 21
<212> DNA
<213> Artificial Sequence

```

<220>
<223> Antisense Sequence

<220>
<221> misc_feature
<222> (1)..(7)
<223> 2'-O-methoxyethyl

<220>
<221> misc_feature
<222> (2)..(2)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (8)..(8)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (10)..(10)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (13)..(13)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (16)..(16)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (20)..(20)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (1)..(21)
<223> Phosphorothioate linkage

<400> 56
gcgtttgctc ttcttcttgc g

<210> 57
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Sequence

<220>
<221> misc_feature

```

<222> (6)..(15)
<223> Phosphorothioate linkage

<220>
<221> misc_feature
<222> (1)..(6)
<223> 2'-O-methoxyethyl

<220>
<221> misc_feature
<222> (15)..(19)
<223> 2'-O-methoxyethyl

<220>
<221> misc_feature
<222> (4)..(4)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (6)..(6)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (19)..(19)
<223> 5'-methyl

<400> 57
gttctcgctg gtgagtttca

20

<210> 58
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense Sequence

<220>
<221> misc_feature
<222> (1)..(6)
<223> 2'-O-methoxyethyl

<220>
<221> misc_feature
<222> (15)..(19)
<223> 2'-O-methoxyethyl

<220>
<221> misc_feature
<222> (4)..(4)
<223> 5'-methyl

<220>

<221> misc_feature
<222> (6)..(6)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (19)..(19)
<223> 5'-methyl

<220>
<221> misc_feature
<222> (1)..(20)
<223> Phosphorothioate linkage

<400> 58
gttctcgctg gtgagtttca

20